AMERICAN MUSEUM NOVITATES

Number 765 Published by THE AMERICAN MUSEUM OF NATURAL HISTORY New York City Jan. 10, 1935

59.57,74

NEW SPECIES OF NYCTERIBIIDAE AND STREBLIDAE (DIPTERA)

BY C. H. CURRAN

The following descriptions are based upon a rather large collection of bat parasites submitted by Major L. H. Dunn, with the request that the new species, already recognized by him, be described. Inasmuch as Major Dunn has under preparation a treatise on his work in the Panama Canal Zone, records of the previously described species are not included in this contribution. I am greatly indebted to Major Dunn for the privilege of examining the interesting collection and also for permission to deposit the types in The American Museum of Natural History. Paratypes have been returned to Major Dunn.

NYCTERIBIIDAE

The collection contains two undescribed species of *Basilia* taken from the bat, *Myotis nigricans* Wiedemann. In 1916 Dr. G. F. Ferris illustrated two species of *Basilia* and in 1924 published a review of the known American Nycteribiidae in which seven species of *Basilia* were listed, three of them being too poorly described to be determined with any degree of certainty. From an examination of the descriptions and figures it seems certain that the two species described as new in the following pages can not possibly be the same as species described from South America, but there is a possibility that one of them may prove to be identical with the species described by Bigot as *Nycteribia mexicana*.

I have prepared a key to those females of *Basilia* that have been illustrated sufficiently well to permit of their positive identification, but I have made no attempt to key out the males. The terminology used is that of Ferris, but there appears to be some confusion in regard to the homology of the tergites. In my slide of *B. myotis* (♀) there appears to be a suture separating the first visible tergite near the base, but an examination of specimens in alcohol proves that this is not present. The impression that a suture is present is gained from the presence of a slightly concave area at the basal fifth of the tergite. It would probably be much better to designate the tergites as "first visible," etc., a course I have followed in the description of *B. dunni*.

KEY TO FEMALES OF *Basilia*

1.—The large tergite occupying the middle of the abdomen without discal hairs except toward the sides (Fig. 3).....2.
This tergite with discal hairs toward the middle (Fig. 1).....3.

2.—The large (third) tergite with discal setulae toward the sides; sides of the abdomen with long bristles beyond the middle (Fig. 3).....*myotis*, n. sp.
The large (third) tergite without discal setulae laterally; sides of abdomen without long bristles.....*speiseri* Ribeiro.

3.—Median, large abdominal tergite divided in the middle.....4.
Median large tergite composed of a single piece, more or less emarginate in the middle behind.....5.

4.—Inner ends of the sections of the third tergite produced posteriorly into a pair of long processes.....*corynorhini* Ferris.
Inner ends of the sections of the third tergite scarcely produced.
antrozoi Townsend.

5.—The large tergite bare in the middle and in front (Fig. 1).....*dunni*, n. sp.
The large tergite haired in the middle and in front.....*forcipata* Ferris.

Basilia antrozoi Townsend

Nycteribia antrozoi TOWNSEND, 1893, Jour. New York Ent. Soc., I, p. 79.
Penicillidia mexicana SPEISER (not Bigot?), Zeitschr. Hymen. u. Dipt., II, p. 172.
Penicillidia antrozoi FERRIS, Ent. News, XXVII, p. 434 (f.); 1924, Ent. News, XXXV, p. 196.

Recorded from New Mexico, Louisiana, Texas, California, and Mexico, from several species of bats. Ferris has published excellent illustrations.

Basilia corynorhini Ferris

Penicillidia corynorhini FERRIS, 1916, Ent. News, XXVII, p. 435 (f.).

Recorded only from *Corynorhinus macrotus pallescens* from California.

Basilia ferruginea Ribeiro

RIBEIRO, 1903, Arch. Mus. Nac. Rio de Janeiro, XII, p. 175 (f.); 1907, idem, XIV, p. 231 (f.).

The descriptions given by Ribeiro do not agree with either of the species described as new in this paper and the species appears to differ from all others described. In 1903, Ribeiro figured the male, but only the head of the female was figured in 1907. As pointed out by Ferris in 1924, the species cannot be positively identified at the present time.

Basilia dunni, new species

Figures 1 and 2

A rather large species, the female slightly over 2 mm. in length. The abdomen shows distinctive characters, but the head, thorax, and appendages do not.

FEMALE.—First visible tergite convex and with stout bristly hairs on the disc, the apex with seven pairs of long bristles, the sides with six pairs of shorter ones. The large discal tergite bears scattered stout setulae except in the middle and in front; on the posterior border there are long bristles but the sides bear shorter ones posteriorly. The third visible tergite is divided from the fourth except in the middle, it bears two short bristles on either side, and the posterior border has three or four bristles on each side; fourth visible tergite with short setulae and two bristles on the sides. The sides of the abdomen, on the median third, bear short setulae and there are two long lateral bristles on each side. On the under side the first visible sternite is a little more than one-third as long as the abdomen; the following sternites, except the fifth visible, are separated from each other although the suture is less evident in the middle, and each bears a row of fine bristles on the posterior margin; third visible sternite with two rows of short setulae on the disc, the second with a row of longer ones posteriorly. The fifth and sixth sternites are united in the middle but with strong suture laterally.

HOLOTYPE.—Female, from *Myotis nigricans* Wiedemann, Santa Rosa, Panama, August 7, 1932 (L. H. Dunn), No. 498.

In some respects this species appears to approach *speiseri* Ribeiro, as originally figured, more closely than the figure given by Ferris, but the presence of bristles on the sides of the abdomen distinguishes it.

Basilia myotis, new species

Figures 3 to 5

The head, thorax, and legs display no distinctive characters, these being found only upon the abdomen.

FEMALE.—First tergite not evident, the second moderately large, widest at the basal third, with distinct bristles on the sides and eight or nine pairs of long apical bristles extending to the tip of the third segment or beyond. Third tergite large, bare except near the lateral margins and on the sides and apex, the apical bristles interspersed with short spines; fourth tergite apparently represented by a pair of posteriorly converging lobes, each bearing several small bristles. On the sides of the abdomen beyond the middle are two transverse rows of four or five bristles, three of them visible from above. On the under side the sternite bearing the ctenidium is about half as long as the abdomen, the ctenidium projecting beyond the sides of the abdomen in most specimens; the following sternites are short and more or less shortened toward the middle where they are less clearly differentiated. The apical segment bears four discal bristles in addition to the marginal ones.

MALE.—This sex agrees rather closely with the male of *speiseri* Ribeiro, but it can apparently be distinguished by the coarser, more erect bristles on the terminal abdominal segment. On the dorsum these bristles are entirely erect, none being depressed.

TYPES.—Holotype, female, allotype, male, and paratypes, three males and three females, from *Myotis nigricans* Wiedemann, Tapia, Panama, December 21, 1933 (L. H. Dunn); six male paratypes from the same host species, Camoganti, Panama, January 31, 1933 (L. H. Dunn).

That this species differs markedly from *speiseri*, as figured by Ferris, is obvious by a comparison of the figures of the female. The male differs by having more numerous, erect bristles on the terminal tergite and they extend much closer to the base. From *silvae* Brethes it differs in the presence of long bristles on the sides of the tergites and, while Brethes' figure of the female is none too good, it is obvious that the two forms are different. It is possible that this form will prove to be *mexicana* Bigot, but this can only be determined by an examination of the type.

Basilia speiseri Ribeiro

Pseudelytromyia speiseri RIBEIRO, 1907, Arch. Mus. Nac. Rio de Janeiro, XIV, p. 233 (f.).

Basilia speiseri FERRIS, 1924, Ent. News, XXXV, p. 198 (f.).

This species was originally described from both sexes from *Atalapha frantzii* Peters, both sexes being figured. If the figures given by Ribeiro are accurate, it seems certain that the species figured by Ferris is different. It should be particularly noted that the bristles on the first visible tergite in Ribeiro's figure extend little more than halfway to the tip of the second visible tergite and, in addition, the latter tergite bears half a dozen discal setulae on each side. Moreover, Ribeiro's figure of the under side of the female shows the sternite bearing the ctenidium to be much shorter than figured by Ferris. The specimens described by Ferris were from *Myotis nigricans* Wiedemann and were collected in Costa Rica.

Basilia forcipata Ferris

FERRIS, 1924, Ent. News, XXXV, p. 196 (f.).

A very distinct species, apparently related to *dunni*, new species. Described from ten specimens from California, New Mexico, Louisiana, and Mexico, from the bats, *Myotis californicus quercinus*, *Myotis thysanoides*, and *Nyctinomus cynocephalus*.

Basilia mexicana Bigot

Nycteribia mexicana BIGOT, 1885, Ann. Soc. Ent. France, p. 245.

Penicillidia mexicana SPEISER, 1902, Zeitschr. Hymen. u. Dipt., II, p. 171.

Basilia mexicana FERRIS, 1924, Ent. News, XXXV, p. 195.

The species is unrecognizable from the description.

Basilia silvae Brethes

Cyclopodia silvae BRETHES, 1913, Bol. Mus. Nac. Chile, V, p. 297 (f.).

Judging from the illustrations this species is a true *Basilia*. The illustrations of the male are excellent, but that of the female is not sufficiently clear to permit determination.

STREBLIDAE

Major Dunn has submitted to me representatives of four new species belonging to the genera *Speiseria* and *Trichobius*, in addition to the recently described *Eldunnia breviceps*. The following key separates the American genera.

KEY TO AMERICAN GENERA

1.—With a ctenidium of black bristles on the ventral surface of the head.....2.
Without a ctenidium on under surface of head.....5.
2.—Eyes present; wings well-developed, with six veins.....3.
Eyes absent; wings reduced to oval pads, much shorter than the thorax. *Metelasmus* Coquillett.
3.—Ctenidium extending to the sides of the head and visible laterally when seen from above.....4.
Ctenidium ending far before the sides of the head.....*Eldunnia* Curran.
4.—Posterior femora about twice as long as the anterior ones; anterior cross-vein before the middle of the wing.....*Strebla* Wiedemann.
Posterior femora decidedly less than twice as long as the anterior ones; anterior cross-vein beyond the middle of the wing.....*Euctenodes* Waterhouse.
5.—Wings entirely lacking.....6.
Wings present, though small.....7.
6.—Posterior legs about twice as long as the anterior ones. *Megistopoda* Macquart.
Posterior legs not twice as long as the anterior ones.....*Paradyschiria* Speiser.
7.—Wings of normal size.....9.
Wings small, narrow or short.....8.
8.—Wings erect and narrow; posterior legs about twice as long as anterior ones. *Pterellipsis* Coquillett.
Wings lying flat, short; posterior legs not twice as long as anterior ones. *Aspidoptera* Coquillett.
9.—Wings with six longitudinal veins.....10.
Wings with only three longitudinal veins and one cross-vein; thorax compressed. *Nycterophilia* Ferris.
10.—Wings without cross-veins.....*Kesellia* Curran.
Wings with at least two cross-veins.....11.
11.—Posterior legs extremely long, three times as long as the body.....12.
Posterior legs at most twice as long as the front pair.....13.
12.—Thorax much broader than long (Peru).....*Synthesiostrebla* Townsend.
Thorax decidedly longer than wide.....*Paratrichobius* Costa Lima.

13.—Posterior legs about twice as long as the anterior pair.....*Speiseria* Kessel.
Posterior legs obviously less than twice as long as the anterior pair.....14.
14.—Head convex laterally and freely articulated.....*Trichobius* Gervais.
Head flattened and with lateral lobes that fit into excavations on the sides of the thorax.....*Pseudostrebla* Costa Lima.

ELDUNNIA Curran

CURRAN, 1934, 'Fam. Gen. N. A. Dipt.,' p. 479.

The specimens representing this genus came to hand as the above cited reference was in press and the genus included in order that the key to North American genera might be complete, but owing to the limited space it was not possible to include figures.

Eldunnia is most closely related to *Strebla* Wiedemann, but differs in having the combined mesonotum and scutellum only a little longer than wide and the head short and very broad. In addition, the ctenidium is composed of only eighteen spines and ends far before the sides of the head. The other characters are common to several genera in the family and need not be repeated here.

GENOTYPE.—*E. breviceps* Curran.

Eldunnia breviceps Curran

Figures 7 and 9

CURRAN, 1934, 'Fam. Gen. N. A. Dipt.,' p. 479.

Length about 1.5 mm. Head slightly less than three times as wide as long (excluding the palpi), bearing a strong ctenidium below; eyes small, composed of five or six large facets; palpi large, subrectangular, their apices transverse, bearing some short apical bristles and coarse setulae, the lower surface clothed with coarse, short setulae.

Mesonotum almost evenly clothed with short, coarse hairs, the margin with short bristles; anterior border strongly excavated laterally for the reception of the lateral lobes of the head; median line extending about halfway to the suture; suture gently arched forward; prescutellar row of bristles very gently arched. Scutellum with two pairs of short bristles, the apical pair slightly longer than the lateral. Prosternum carried forward more strongly than the middle of the mesonotum, its anterior margin more evidently V-shaped; propleura lying almost horizontal and platelike in front of the anterior coxae. Halteres moderately large.

Legs and wings as figured.

Abdomen with relatively sparse setulae on the under surface, the upper surface wholly membranous and without hair except at the apex.

TYPES.—Holotype, female, and one paratype, from *Lonchophylla robusta* Miller, Chilibrillo Caves, Panama, March 9, 1933 (L. H. Dunn).

The specimens upon which the above description is based were forwarded by Major Dunn with the notation that they obviously represented an undescribed genus.

SPEISERIA Kessel

KESSEL, 1925, Jour. N. Y. Ent. Soc., XXXIII, p. 19.

The only species thus far placed in *Speiseria* is *ambigua* Kessel, originally described from *Carollia perspicillatum aztecum*, from Panama. I have seen specimens from Panama and British Guiana.

I am rather inclined to believe that *Speiseria* will eventually be found to be a synonym of *Paratrichobius* Costa Lima. I am not aware that any males have been found belonging to *Speiseria* and no females of *Paratrichobius* have been recorded. It seems remarkable that so many females of *Speiseria* should be found and so few males of *Paratrichobius*. The only specimen I have of this latter genus was taken along with four females of *Speiseria*, two of them belonging to *S. dunni*. The evidence supporting my argument is not, however, conclusive, and the two names may be retained until more material is available.

The two species placed in this genus may be readily separated by use of the following key.

TABLE OF SPECIES

1.—Median line of the mesonotum extending to the suture; eyes apparently with not more than nine facets ..... *ambigua* Kessel.

Median mesonotal line extending only halfway to the suture; eyes with many facets ..... *dunni*, n. sp.

Speiseria dunni, new species

Figure 6

Agrees well with *ambigua* Kessel, but the number of eye-facets is apparently about twenty-one (I am unable to determine the exact number in the material before me), the bristles of the head are stronger, and the median line on the mesonotum extends only halfway to the suture. On the anterior of the mesonotum are three pairs of stout bristles, one on the humeri and two inside; apical scutellar bristles very much longer than the lateral pair.

The wings, legs, and abdomen do not show any striking differences.

TYPES.—Holotype, female, and two paratypes, females, from either *Pteropteryx canina* Wiedemann or *Uroderma bilobatum* Peters, El Real, Panama, April, 1931 (H. C. Clark); two female paratypes, from *Uroderma bilobatum* Peters, Summit, Canal Zone, July 29, 1931 (L. H. Dunn).

PARATRICHOBIUS Costa Lima

COSTA LIMA, 1921, Arch. Esc. Sup. Agric. e Med. Veter., Nichtheroy, V, p. 20.

The type of this genus was originally described as *Trichobius longicrurus* by Ribeiro. If *Speiseria* should prove to be the same as *Paratrichobius* the genus would contain three species, unless *ambigua* Kessel is the female of *longicrurus*, a relationship that does not seem likely from

the figure given by Ribeiro. Both these species have the median line of the mesonotum entire.

I have before me a single male taken by Major Dunn at Summit, Canal Zone, July 29, 1931, in company with two females of *S. dunni*, and I believe it to be the male of that species. For this reason I am not naming it. The chaetotaxy of the head and thorax is the same except that the bristles are longer and stouter, especially those on the back of the head and front of the thorax, and the median scutellar bristles are very long. The front femur bears the obliquely transverse row of stout spines above, such as occur in *longicrurus*.

Trichobius Gervais

A key to the known species belonging to this genus is presented. It should be borne in mind that a magnification of at least fifty is necessary in order that all details may be observed and that proper lighting is essential if the tiny setulae on the mesonotum are to be seen. Under improper lighting and low magnification the disc of the mesonotum may appear to be bare.

Table of Species

1.—The median line of the mesonotum extends to the suture.....2.
The median line does not nearly reach the suture, usually extending less than halfway.....6.
2.—Femora with some coarse bristles.....3.
Femora rather densely hairy, none of the hairs stout.....*hirsutulus* Bequaert.
3.—Transverse mesonotal suture marked by a black line; length about 4 mm....4.
Transverse suture not marked by a black line.....5.
4.—Eight scutellar bristles.....*major* Coquillett.
Four scutellar bristles.....*quadrisetosus* Kessel.
5.—Small species, about 1.25 mm. long (Fig. 8).....*uniformis*, n. sp.
Large, about 4 mm. long.....*corynorhini* Cockerell.
6.—Mesonotum with a large part of its surface without apparent hairs, the minute ones absent.....11.
Mesonotum with at least minute hairs over the middle.....7.
7.—Mesonotum very strongly rounded in front, almost hemicircular before the suture.....*caecus* Edwards.
Mesonotum much less obviously rounded, the humeral angles more or less evident.....8.
8.—Median bristles on the front of the mesonotum not much weaker than those toward the sides.....9.
Median mesonotal bristles all very much weaker than those toward the sides (Fig. 10).....*mixtus*, n. sp.
9.—Mesonotum practically transverse in front.....10.
Mesonotum rather evidently rounded in front.....*phyllostomae* Kessel.

10.—With a row of distinct bristles in front of the scutellum.....*dugesii* Townsend.
With only short setulae in front of the scutellum (Fig. 11).....*blandus*, n. sp.
11.—With a row of bristles preceded by a row of setulae in front of the scutellum.
sparsus Kessel.
With only short setulae in front of the scutellum.....12.
12.—Several rows of short setulae immediately in front of the scutellum; suture separating scutellum and mesonotum complete.....*truncatus* Kessel.
A single row of setulae in front of the scutellum (Fig. 12)....*parasiticus* Gervais.

Trichobius corynorhini Cockerell

Cockerell, 1910, Can. Ent., XLII, p. 59.

? Trichobius major quadrisetosus Kessel, 1925, Jour. N. Y. Ent. Soc., XXXIII, p. 15.

Despite the presence of a ferruginous line on the transverse suture, I am referring fifteen specimens from a "lump-nosed bat" to this species; they were collected six miles southwest of Freedom, Woodward County, Oklahoma, on July 17, 1930, by Dr. R. D. Bird. Some of the specimens agree perfectly with Dr. Cockerell's description, disagreeing only in the presence of the dark sutural line. Other specimens differ only in the number of facets in the eyes.

The number of eye-facets is not an important character unless it differs greatly. In the series before me I find the following variation.

Two females with 11 ommatidia
Two males and five females with 13 ommatidia
Five males and one female with 14 ommatidia
One male and one female with 15 ommatidia

In addition, one of seven specimens of *T. major* Coquillett has nine ommatidia, the remainder with the normal eight.

If I am correct in the suggested synonymy, the difference between this species and *major* is not confined to the number of scutellar bristles and position of the cross-veins. The aristae are very different. In *major* the arista has the rays all on one side and they are longer than in *corynorhini*. In *corynorhini* the rays are shorter, situated on the anterior side, except near the apex where they arise from the inner side and give a peculiar brushlike termination to the organ. This difference is of importance and the character tends to verify the distinctness of the two species.

Only a comparison of the types of *quadrisetosus* and *corynorhini* will clear up the identity of the forms.

Trichobius uniformis, new species

Figure 8

A small species, only about 1.25 mm. in length, the mesonotum with almost uniform bristles.

Head pyramidal; eyes small; palpi sparsely bristled on the under surface. Mesonotum and scutellum longer than wide, the suture separating them entire although very weak except toward the sides; median mesonotal line extending to the suture, the suture curved forward medianly; scutellum with four bristles. Legs robust; femora with bristles. Wings with venation and chaetotaxy as figured. Abdomen with numerous tiny setulae beneath.

TYPES.—Holotype, female, allotype, male, from *Glossophaga soricina leachi* Gray, Paraiso, Canal Zone, October 17, 1930 (No. 31). Paratypes: male and female, from *Lonchophylla robusta* Miller, Chilibrillo Caves, Panama, March 9, 1933 (No. 16); male and two females, from *Glossophaga soricina leachi* Gray, Bella Vista, near Panama City, June 25, 1931 (Nos. 33 and 34). All the specimens were collected by Major L. H. Dunn.

Trichobius mixtus, new species

Figure 10

A moderately large species (length about 2 mm.), very similar to *dugesii* Townsend, but without strong bristles on the middle of the mesonotum in front.

Palpi rather convex on the inner edge, bearing a long bristle on the outer apex and with two shorter bristles in front; bristles of the head rather long; propleura prominent, with three bristles on the outer edge; mesonotum and scutellum longer than wide, the transverse suture bowed back, the disc evenly setulose, in front with very short bristles, the sides with longer ones. Femora robust, bearing bristles. First and third veins each with one strong basal bristle, the fourth with three. Abdomen with strong bristles on the sides basally and at the apex.

TYPES.—Holotype, male, and six paratypes, males, from *Phyllostomus hastatus panamensis* Allen, Chilibrillo Caves, Panama, August 4, 1931 (L. H. Dunn).

Trichobius blandus, new species

Figure 11

A small species (1.25 to 1.5 mm. long), related to *parasiticus* Gervais, but with the mesonotum much more extensively bristled.

Head with rather few bristles; palpi convex inwardly, the outer apex with a long fine bristle, the apex with two short bristles, the under side sparsely setulose. Thorax almost transverse in front; mesonotum and scutellum about as long as wide, the mesonotum with tiny setulae and bristles as shown in the figure, the setulae before the scutellum only a little stronger than those on the disc; prothorax rather truncate and with bristles in front. First vein with a very long basal bristle, the fourth and fifth each with two weaker ones. Legs with bristles. Abdomen with bristles apically and on the sides basally, the sides with numerous tiny setulae, the disc bare.

TYPES.—Holotype, male, allotype, female, and paratypes, two females, from *Glossophaga soricina leachi* Grey, Paraiso, Canal Zone, October 17, 1930 (No. 7);

eight females from the same host, Bella Vista, near Panama City, June 25, 1931 (Nos. 32, 33), all collected by L. H. Dunn.

The arista is whitish, thick basally, the rays all arising from the anterior surface, long toward the base and gradually shortening toward the apex.

Trichobius parasiticus Gervais

Figure 12

GERVAIS, 1844, 'Atlas de Zoologie,' Paris.

Unfortunately I do not have access to the original description of this species so can give no page reference. I have followed Kessel in the determination of the species but feel that there must be a great deal of doubt concerning the identity of the form described by Gervais. Unless the type is in existence the current interpretation of the species should be accepted.

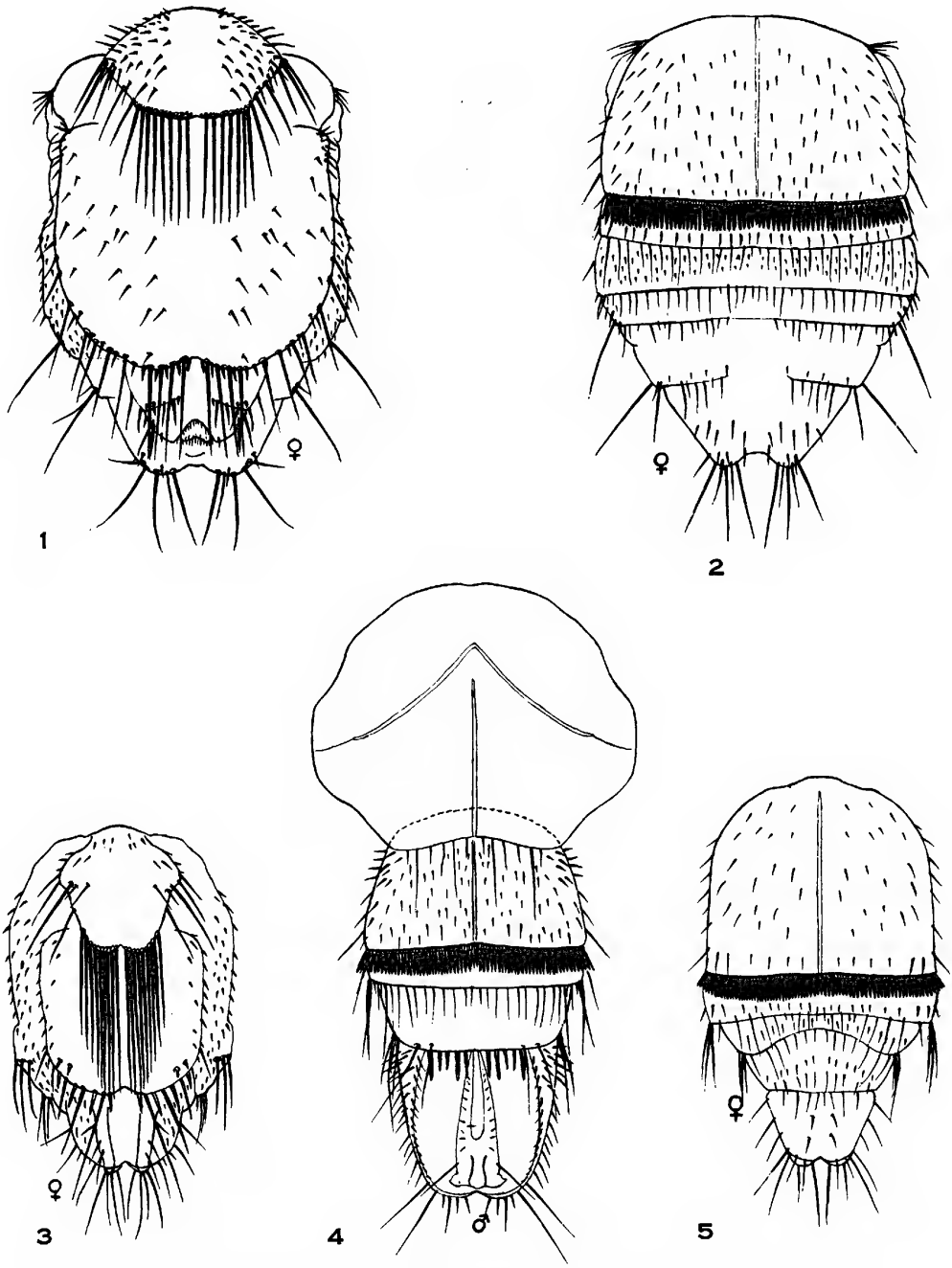


Fig. 1. *Basilia dunni*, new species, female abdomen from above.
Fig. 2. *Basilia dunni*, new species, female abdomen from below.
Fig. 3. *Basilia myotis*, new species, female abdomen from above.
Fig. 4. *Basilia myotis*, new species, male thorax and abdomen from below.
Fig. 5. *Basilia myotis*, new species, female abdomen from below.

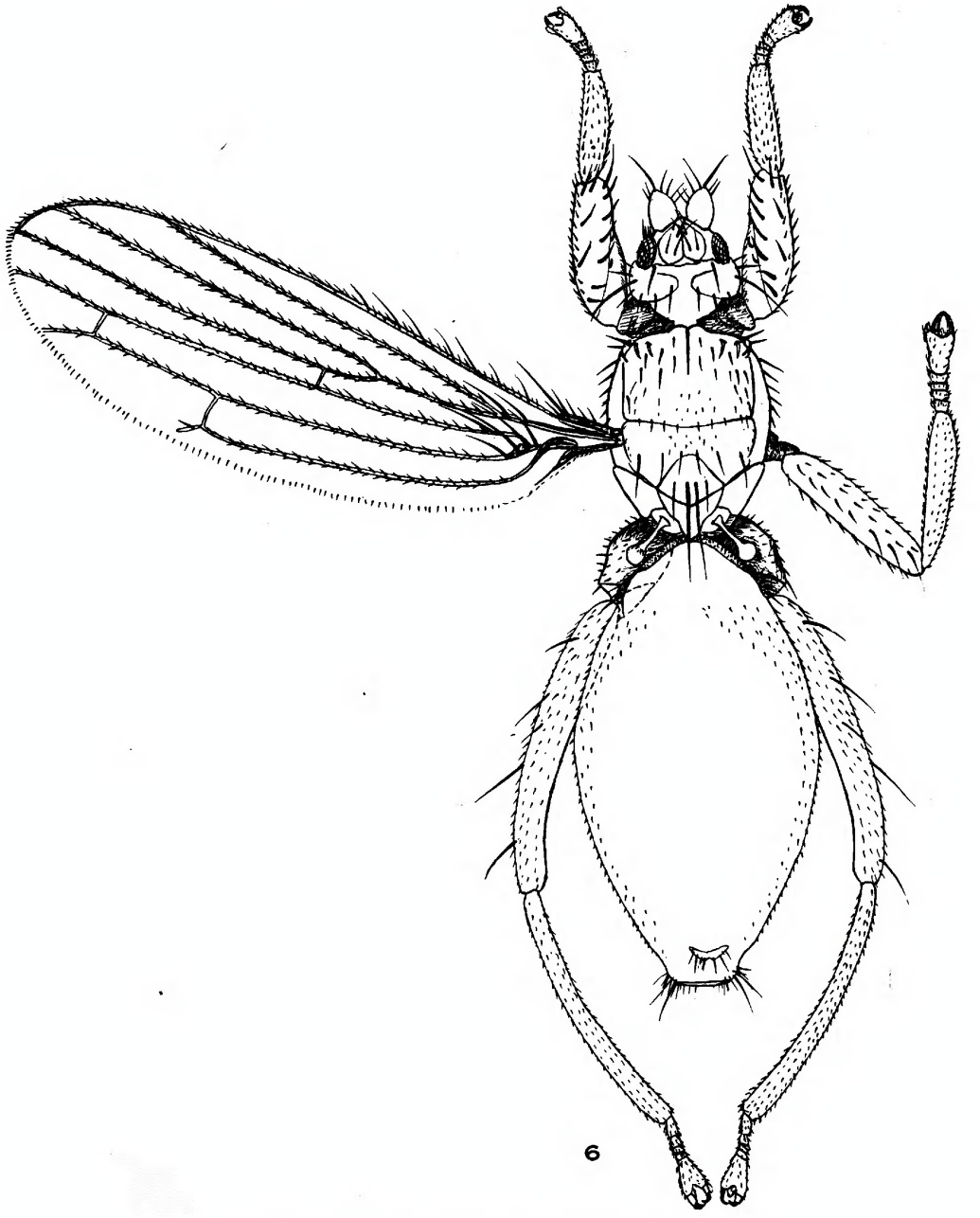
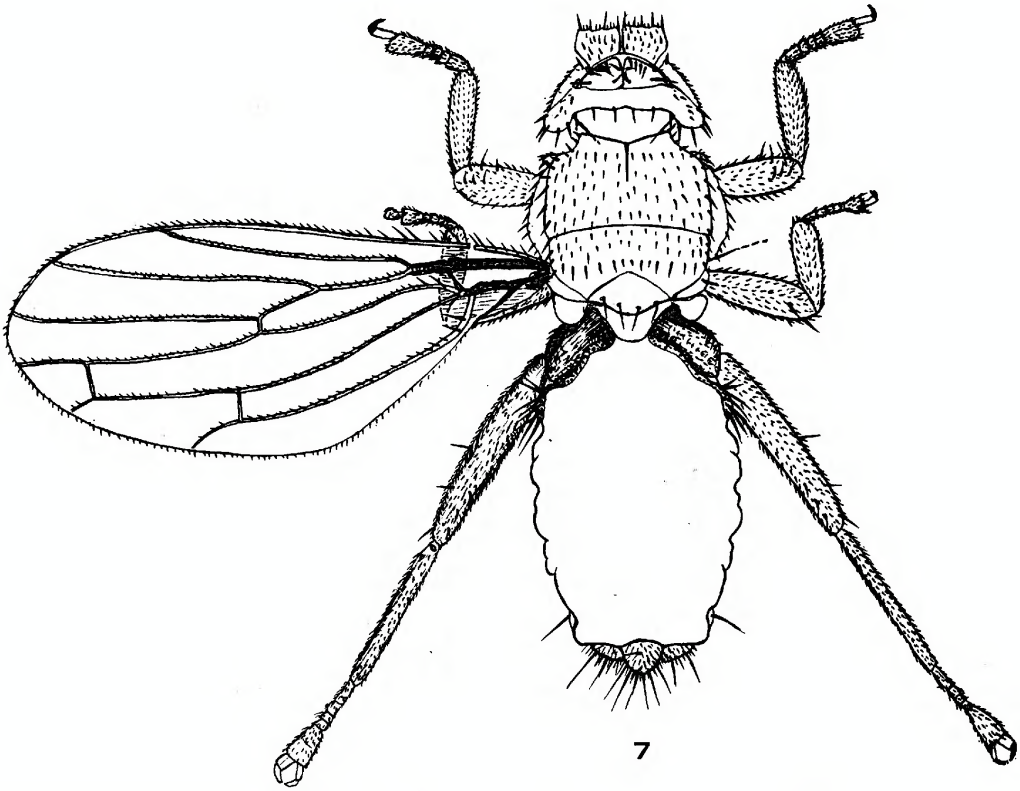
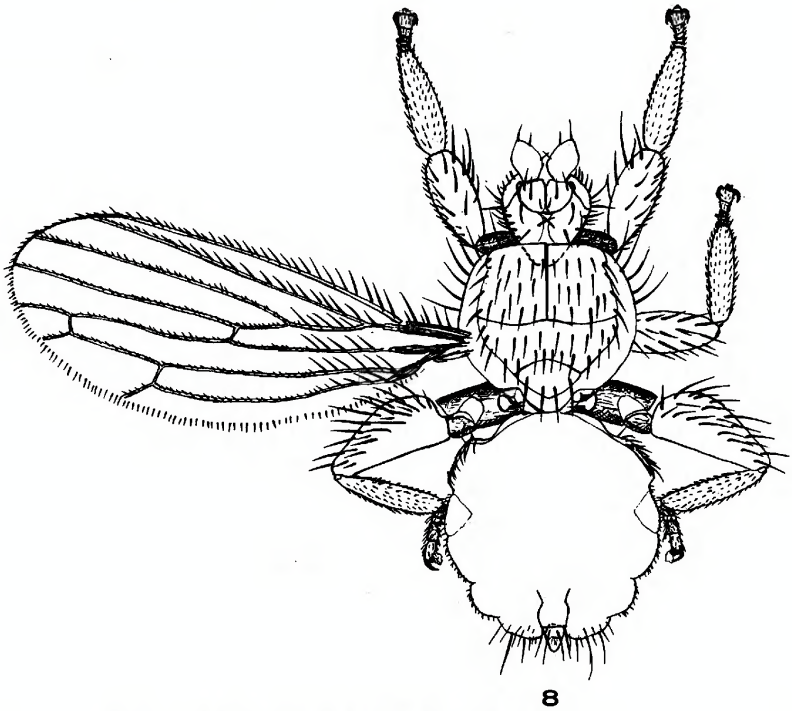


Fig. 6. *Speiseria dunni*, new species, female.



7



8

Fig. 7. *Eldunnia breviceps* Curran, female.
Fig. 8. *Trichobius uniformis*, new species, female.

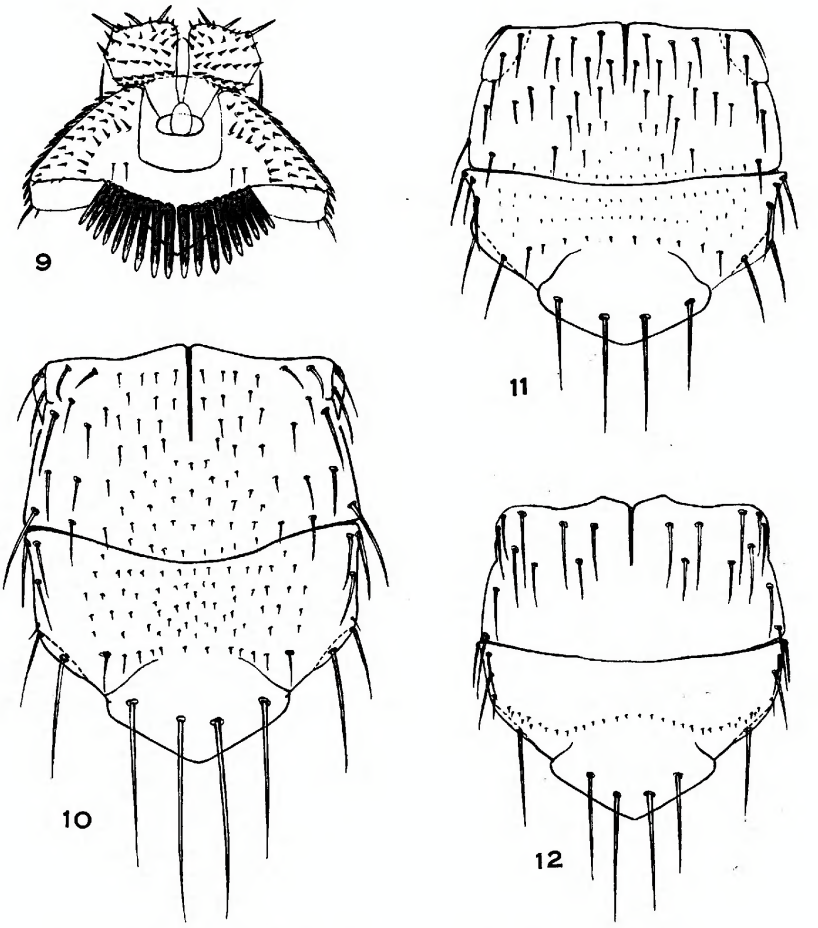


Fig. 9. *Eldunnia breviceps* Curran, female head from below.
Fig. 10. *Trichobius mixtus*, new species, mesonotum.
Fig. 11. *Trichobius blandus*, new species, mesonotum.
Fig. 12. *Trichobius parasiticus* Gervais, mesonotum.